REMARKS

Applicants request favorable reconsideration in view of the following remarks in response to the Office Action dated June 10, 2004. The three-month deadline for filing a response falls on September 10, 2004. Therefore, Applicants believe that this response is being timely filed. In the event that Applicants are incorrect in their assumption, please charge any necessary fee to Deposit Account No. 23-2415.

CLAIMS

Claims 1-3, 7-27 and 31-48 are pending in this application.

The Final Office Action is Improper

The Examiner has rejected claims 1-3, 7-27 and 31-48 as allegedly directed to non-statutory subject matter. Specifically, the Examiner states:

> Consideration of the instant claims indicates, firstly that the method is directed to analyzing a library as set forth in the preamble of claim 1, for example, as well as noted before, in the actual claim steps wherein a library is enumerated but not physically produced or even filtered as to actual compound manipulations. Only data is manipulated in the instant claims.

Office Action at p. 2.

However, "[w]hen a claim is refused for any reason relating to the merits thereof it should be 'rejected' and the ground of rejection fully and clearly stated." M.P.E.P. § 707.07(d). "A plurality of claims should never be grouped together in a common rejection, unless that rejection is equally applicable to all claims in the group." *Id.* "In making the final rejection, all outstanding grounds of rejection of record should be carefully reviewed, and any such grounds relied on in the final rejection should be reiterated. They must also be clearly developed to such an extent that applicant may readily judge the advisability of an appeal unless a single previous Office action contains a complete statement supporting the rejection." M.P.E.P. § 706.07.

It appears that the Examiner has based his final rejection on independent claim 1 only. Applicants point out that claims 2-3 and 7-21, which depend on claim 1, recite additional limitations which have not been addressed by the Examiner, including, for example, outputting a list generated by the method and refining the focused library to increase diversity. Additionally, claims 23-27 and 31-48, which have also been finally rejected by the Examiner, are not dependent on claim 1. For example, claim 24 is directed to a computer program product, whereas claim 1 is directed to a method. Moreover, independent claims 25, 47 and 48, and therefore dependent claims 26-47, comprise the step of "extracting said enumerated focused library" or "means for extracting an enumerated focused library" neither of which are present in claim 1 and neither of which have been addressed in the final rejection.

In summary, grounds for rejecting each claim have not been clearly or fully articulated. The Examiner has therefore failed to meet his burden and, in treating all the claims in a shotgun fashion, has created ambiguity as to the reasons for rejecting the pending claims such that Applicants cannot readily judge the advisability of an appeal at this time. Accordingly, Applicants respectfully request withdrawal of the finality of the rejection and clarification of the reasons for rejection as applicable to each claim.

The Rejections of Claims 1-3, 7-27 and 31-48 Under 35 U.S.C. § 101 Should Be Withdrawn

Claims 1-3, 7-27 and 31-48 are rejected as allegedly being directed to non-statutory subject matter. To the extent the reasons for rejecting each claim can be understood, Applicants submit that the grounds for rejection are in error.

The Law

Mathematical algorithms are not patentable subject matter only to the extent that they are merely abstract ideas since, standing alone, certain types of mathematical subject matter "represent nothing more than abstract ideas until reduced to some type of practical application, i.e., 'a useful, concrete and tangible result.'" *State Street Bank & Trust v. Signature Financial Group, Inc.*, 149 F.3d 1368 (Fed. Cir. 1998) (citing *In re Alappat*, 33 F.3d 1526 (Fed. Cir. 1994)). "Unpatentable

mathematical algorithms are identifiable by showing they are merely abstract ideas constituting disembodied concepts or truths that are not 'useful.' From a practical standpoint, this means that to be patentable an algorithm must be applied in a 'useful' way" and "[t]he mere fact that a claimed invention involves inputting numbers, calculating numbers, outputting numbers, and storing numbers, in and of itself, [does] not render it nonstatutory subject matter." *Id.* at 1373-74.

In holding that a patent's claims to a method for enhancing a long distance telephone call message record by adding a data field with information on the long distance provider of the call recipient fell "comfortably within the broad scope of patentable subject matter," the Federal Circuit noted that "[b]ecause § 101 includes processes as a category of patentable subject matter, the judicially defined proscription against patenting of a 'mathematical algorithm,' to the extent such a proscription still exists, is narrowly limited to mathematical algorithms in the abstract." *AT&T Corp. v. Excel Communications, Inc.* 172 F.3d 1352 (Fed. Cir. 1999).

In *State Street.,* the Federal Circuit explained that "the transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price, constitutes a practical application of a mathematical algorithm, formula, or calculation, because it produces 'a useful, concrete and tangible result' – a final share price momentarily fixed for recording and reporting purposes and even accepted and relied upon by regulatory authorities and in subsequent trades." *Id.* For comparative purposes, Applicants note that the independent claim at issue in *State Street* read:

> A data processing system for managing a financial services configuration of a portfolio established as a partnership, each partner being one of a plurality of funds, comprising:
>
> (a) computer processor means for processing data;
> (b) storage means for storing data on a storage medium;
> (c) first means for initializing the storage medium;
> (d) second means for processing data regarding assets in the portfolio and each of the funds from a previous day and data regarding increases or decreases in each of the funds, assets and for allocating the percentage share that each fund holds in the portfolio;
> (e) third means for processing data regarding daily incremental income, expenses, and net realized gain or loss for the portfolio and for allocating such data among each fund;

(f) fourth means for processing data regarding daily net unrealized gain or loss for the portfolio and for allocating such data among each fund; and
(g) fifth means for processing data regarding aggregate year-end income, expenses, and capital gain or loss for the portfolio and each of the funds.

Applicants respectfully point out that no "output" step resulting in a physical transformation outside the computer was recited in the issued claims.

The law makes it clear that "[o]nly when the claim is devoid of any limitation to a practical application in the technological arts should it be rejected under 35 U.S.C. § 101." M.P.E.P. § 2106(II)(A). "To be statutory, a claimed computer-related process must either: (A) result in a physical transformation outside the computer for which a practical application in the technological arts is either disclosed in the specification or would have been known to a skilled artisan, or (B) be limited to a practical application within the technological arts." M.P.E.P. § 2106(IV)(B)(2)(b). The M.P.E.P at § 2106(IV)(B)(2)(b)(ii) also illustrates why the claims such as those pending are drawn to statutory subject matter:

> A computer process that simply calculates a mathematical algorithm that models noise is nonstatutory. However, a claimed process for digitally filtering noise employing the mathematical algorithm is statutory.
>
> *The Claims*
>
> Independent claim 1 of the instant application reads:
>
> A computer implemented method of analyzing a non-enumerated virtual library, comprising:
> (a) randomly selecting a set of N reagent combinations from the non-enumerated virtual library, wherein said selected N reagent combinations represent a set of N compounds;
> (b) enumerating said set of N compounds;
> (c) selecting M compounds from said set of N enumerated compounds wherein the selection of M compounds from said set of N enumerated compounds is based on at least one fitness function;
> (d) deconvoluting said M compounds into their associated building blocks;
> (e) generating said focused library of at least one compound based on said building blocks; and
> (f) enumerating at least one compound in said focused library of at least one compound.

Independent claim 23 reads:

A computer based system for analyzing a non-enumerated virtual library, comprising:
means for randomly selecting a set of N reagent combinations from the virtual library, wherein said selected N reagent combinations represent a set of N compounds;
means for enumerating said set of N compounds;
means for selecting M compounds of said set of N enumerated compounds based on a fitness function;
means for deconvoluting said M compounds into their associated building blocks;
means for enumerating a plurality of said compounds of said focused library of compounds; and
means for selecting at least one K compound of said enumerated compounds of said focused library based on the fitness function.

To carry out the transformation, Applicants claimed invention does indeed, to some extent, employ a mathematical algorithm. However, this alone is not determinative of whether the claims are directed to statutory subject matter. As explained above, the Examiner is required to determine whether the claimed invention "merely manipulates an abstract idea" or "is limited to a practical application of the abstract idea or mathematical application in the technological arts."

As apparent from reading Applicants' specification, the presently claimed method has at least one practical application within the technological arts. Therefore, analogous to the claims at issue in *State Street* and consistent with the example from the M.P.E.P. set forth above, independent claim 1 is proper under 35 U.S.C. § 101 without reciting a particular physical transformation outside the computer. The rejection of claim 1 is in error and should therefore be withdrawn.

Additionally, claims 2-3 and 8-22, all of which ultimately depend on claim 1, recite the further limitation of "outputting a list." This "outputting" step has not been addressed by the Examiner, which is not surprising since it further reflects that these claims are directed to statutory subject matter.

The remaining claims, like claims 1-3 and 8-23, are also directed to statutory subject matter. Independent claim 24 is directed to a computer program product and reads:

A computer program product comprising a computer useable medium having computer program logic recorded thereon for enabling a processor to analyze a non-enumerated virtual library, the computer program logic comprising:

a first function that enables the processor to randomly select a set of N reagent combinations from the virtual library, wherein said selected N reagent combinations represent a set of N compounds;

a second function that enables the processor to enumerate said set of N compounds;

a third function that enables the processor to deconvolute said M compounds into their associated building blocks;

a fourth function that enables the processor to generate said focused library based on said building blocks;

a fifth function that enables the processor to enumerate a plurality of said compounds of said focused library; and

a sixth function that enables the processor to select at least one K compound of said enumerated compounds of said focused library based on the fitness function.

Examples of "computer usable medium" are provided in the specification as "media such as removable storage device 2010, a hard disk installed in hard disk drive 2010, and signals. These computer program products are means for providing software to a computer system." *See, e.g,* Specification at p. 51, ll. 9-12. The Examiner has not addressed why the computer program product claim constitutes nonstatutory subject matter, which again is not surprising since the claims are comfortably within the scope of proper subject matter under 35 U.S.C. § 101. *See In re Beauregard,* 53 F.3d 1583 (Fed. Cir. 1995).

Independent claims 25, 47 and 48, and therefore dependent claims 26-47, comprise "extracting said enumerated focused library" or "means for extracting an enumerated focused library." Independent claim 25 reads:

A computer implemented method for analyzing an enumerated virtual library, comprising:

(a) randomly selecting a set of N enumerated compounds from the enumerated virtual library;

(b) selecting M compounds from said set of N enumerated compounds wherein the selection of M compounds from said set of N enumerated compounds is based on at least one fitness function;

(c) deconvoluting said M compounds into their associated building blocks; and

(d) extracting said enumerated focused library based on said building blocks, said enumerated focused library including S enumerated compounds.

Independent claim 47 reads:

A computer based system for analyzing an enumerated virtual library, comprising:
means for randomly selecting a set of N enumerated from the enumerated virtual library;
means for selecting M compounds of said set of N enumerated compounds based on a fitness function;
means for deconvoluting said M compounds into their associated building blocks;
means for extracting an enumerated focused library, based on said associated building blocks from the enumerated virtual library, wherein said enumerated focused library includes S enumerated compounds; and
means for selecting at least one K compound of said S enumerated compounds based on the fitness function.

Independent claim 48 reads:

A computer program product comprising a computer useable medium having computer program logic recorded thereon for enabling a processor to analyze an enumerated virtual library, the computer program logic comprising:
a first function that enables the processor to randomly select a set of N enumerated compounds from the enumerated virtual library;
a second function that enables the processor to select M compounds of said set of N enumerated compounds based on the fitness function;
a third function that enables the processor to deconvolute said M compounds into associated building blocks;
means for extracting an enumerated focused library, based on said associated building blocks from the enumerated virtual library, wherein said enumerated focused library includes S enumerated compounds; and
a fourth function that enables the processor to select at least one K compound of said enumerated compounds based on the fitness function.

Tellingly, the Examiner has not alleged, let alone explained, why the "extracting said enumerated focused library" or "means for extracting an enumerated focused library" is not a practical application. Applicants submit that these claims define proper subject matter under Section 101.

For the reasons set forth above, Applicants believe that pending claims 25-48 are directed to statutory subject matter and withdrawal of the rejection is respectfully requested.

CONCLUSION

Applicants believe that, for the reasons explained above, all of the pending claims are in condition for allowance and therefore request prompt and favorable action.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (858) 350-2319.

Respectfully submitted,

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